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# RELIABILITY AND PERFORMANCE SOLUTIONS

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## BURNER-WINDBOX AIR DISTRIBUTION ANALYSIS

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RELIABILITY AND PERFORMANCE SOLUTIONS is based on demonstrated knowledge and proven experience. It is published by RJM Corporation for executives and operations personnel to provide information for improving reliability, maximizing performance, and increasing return on capital investment.

RJM Corporation • Ten Roberts Lane, Ridgefield, CT 06877 • 203-438-6198 • Fax: 203-431-8255

IP7\_003244

# **New Method Cuts Time and Cost of Air Distribution Analysis**

Poor burner-windbox air distribution is a common problem - and a costly one, too. Now there's an innovative technology for air distribution analysis that cuts time and costs - and increases accuracy at the same time.

RJM's proprietary air distribution analysis is a superior technique when compared to physical or computer models. Why? Because the analysis technique uses actual data taken on your unit, rather than information drawn from simulated conditions. Real data greatly improves prospects for complete problem solving.

The investigation and response cycle of less than one week means quicker fixes and faster returns to optimum operation. If immediate corrective action or faster response is required, preliminary data analysis can be performed in the field.

## **Accurate Identification of Operational Problems**

Use this RJM technology to correct classic burner-windbox airflow problems such as:

- **O<sub>2</sub> imbalances**
- **furnace gas flow imbalance**
- **high excess air levels**
- **high fly ash carbon levels**
- **high CO readings at normal excess air levels**
- **slagging "eyebrows" on burners**
- **chronic problems with flame impingement on tubes**

Also employ RJM's method of analysis to monitor furnace performance. For example, it's an inexpensive way to determine airflow balance when combustion units are being optimized for SO<sub>x</sub> and NO<sub>x</sub> control.

## **How the Analysis Works**

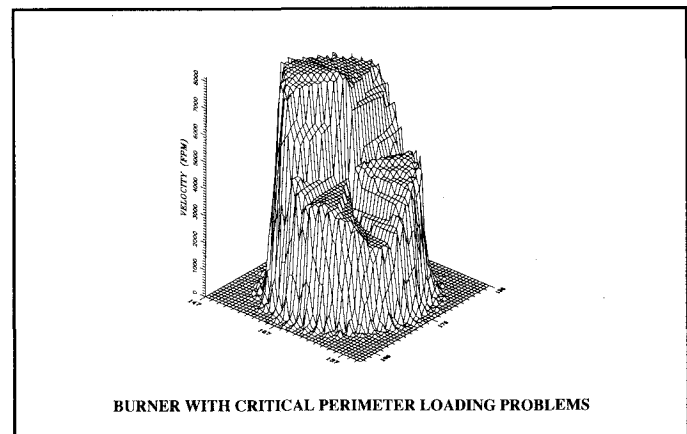
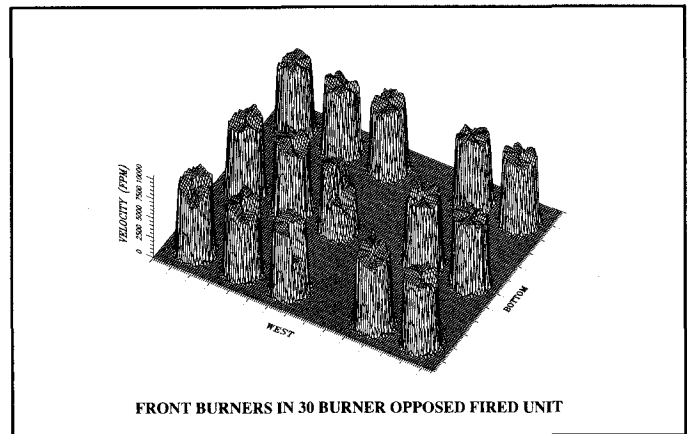
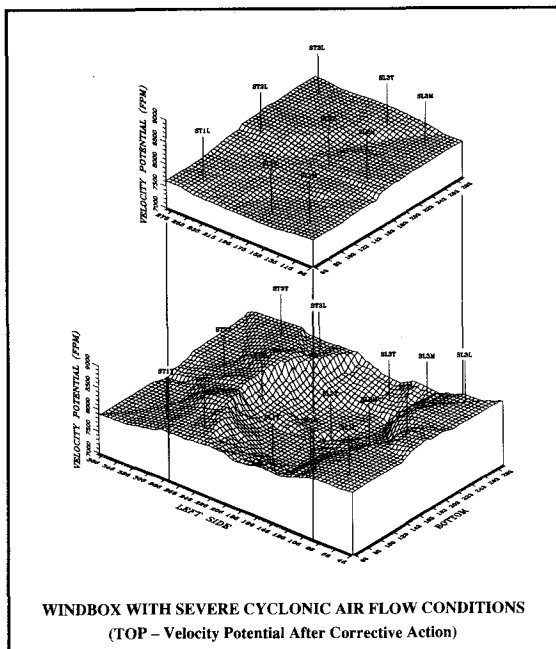
The RJM analysis technique uses a temperature compensated velocity probe inserted through a port on the burner-axis to measure burner-perimeter velocity loadings. On dual fuel or oil-fired units, access is through the oil atomizer jacket tube. RJM's method can be used on virtually all combustion units; the only requirement is that the axis of each burner be accessible to the probe through a scanner port, an oil atomizer jacket tube, or a sight port.

## **Report Documentation**

After the field testing, RJM will provide recommended solutions for combustion problems, as well as full documentation, including:

- **three dimensional projections for each burner**
- **a composite three dimensional projection for all burners**
- **windbox velocity potential profiles**
- **calculated burner deviations from required airflow**
- **individual burner perimeter loading deviations**
- **tabulated data flagged for easy evaluation**

# Graphics Make the Problems Visible



## WHAT SHOULD YOU DO?

Call us. We are always happy to discuss your project. Ask us for our references – we are proud of our capabilities and expertise, and we will gladly send you a list of clients who have benefited from this and many of our other unique combustion services. Finally, try us.

Call us at (203) 438 6198

RJM Corporation  
Ten Roberts Lane  
Ridgefield CT 06877  
Or call (203) 438-6198

## REQUEST FOR ADDITIONAL INFORMATION

**YES** Please have a technical consultant call me:

Station and Unit Name \_\_\_\_\_ I can be reached at: ( ) \_\_\_\_\_

The best time to call is: \_\_\_\_\_ am \_\_\_\_\_ pm

Description of Problem:

I am interested to learn more about the following  
RJM Services:

- |   |   |
|---|---|
| <input type="checkbox"/> Air Flow Balancing                 | <input type="checkbox"/> Coal Flame Stabilizers         |
| <input type="checkbox"/> Low NO <sub>x</sub> Oil Atomizer   | <input type="checkbox"/> On-Site Diagnostics            |
| <input type="checkbox"/> Oil Atomizer Optimization          | <input type="checkbox"/> Reliability Programs           |
| <input type="checkbox"/> Fuel Balancing                     | <input type="checkbox"/> Heat Rate Improvement Programs |
| <input type="checkbox"/> NO <sub>x</sub> Reduction Programs |   |

NAME: (If not on mailing label) \_\_\_\_\_

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make necessary address corrections.)

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